

EXHIBIT 8



US010984911B2

(12) **United States Patent**
Smith et al.

(10) **Patent No.:** **US 10,984,911 B2**

(45) **Date of Patent:** **Apr. 20, 2021**

(54) **MULTIPLE WAVELENGTH SENSOR
EMITTERS**

A61B 5/02416 (2013.01); *A61B 5/1455*
(2013.01); *A61B 5/1495* (2013.01);
(Continued)

(71) Applicant: **Cercacor Laboratories, Inc.**, Irvine,
CA (US)

(58) **Field of Classification Search**

None

See application file for complete search history.

(72) Inventors: **Robert A. Smith**, Lake Forest, CA
(US); **David Dalke**, Rancho Santa
Margarita, CA (US); **Ammar Al-Ali**,
San Juan Capistrano, CA (US);
Mohamed K. Diab, Ladera Ranch, CA
(US); **Marcelo M. Lamego**, Cupertino,
CA (US)

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,316,395 A 4/1967 Lavin
3,316,396 A 4/1967 Lavin

(Continued)

(73) Assignee: **Cercacor Laboratories, Inc.**, Irvine,
CA (US)

FOREIGN PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

DE 3244695 C2 10/1985
EP 0 231 379 8/1987

(Continued)

(21) Appl. No.: **17/028,655**

OTHER PUBLICATIONS

(22) Filed: **Sep. 22, 2020**

US 8,845,543 B2, 09/2014, Diab et al. (withdrawn)

(Continued)

(65) **Prior Publication Data**

US 2021/0007634 A1 Jan. 14, 2021

Related U.S. Application Data

(63) Continuation of application No. 16/437,611, filed on
Jun. 11, 2019, which is a continuation of application
(Continued)

(51) **Int. Cl.**
A61B 5/1455 (2006.01)
G16H 40/67 (2018.01)
(Continued)

(52) **U.S. Cl.**
CPC *G16H 40/67* (2018.01); *A61B 5/0022*
(2013.01); *A61B 5/0205* (2013.01); *A61B*
5/0261 (2013.01); *A61B 5/0295* (2013.01);

Primary Examiner — Eric F Winakur

Assistant Examiner — Marjan Fardanesh

(74) *Attorney, Agent, or Firm* — Knobbe, Martens, Olson
& Bear, LLP

(57) **ABSTRACT**

A physiological sensor has light emitting sources, each
activated by addressing at least one row and at least one
column of an electrical grid. The light emitting sources are
capable of transmitting light of multiple wavelengths and a
detector is responsive to the transmitted light after attenu-
ation by body tissue.

29 Claims, 48 Drawing Sheets

